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No. 14

**NEW SPECIES OF WEST AMERICAN SHELLS \***

BY

A. M. STRONG

Mention was made in the lists of marine Mollusca of Guadalupe Island,<sup>1</sup> and the Tres Marias Islands, Mexico,<sup>2</sup> of a number of species which might prove to be undescribed. It is the purpose of the present paper to record some of these.

The material from Guadalupe Island was dredged by G. D. Hanna, E. K. Jordan and J. R. Slevin from a small patch of sandy bottom in the semi-sheltered cove at the south end of the island in from 9 to 15 fathoms. All of the species from there that appear to be new are fully described herein; they were given by genus-name only in the faunal list. The material from the Tres Marias Islands was dredged by G. D. Hanna off the east side of Maria Madre Island in front of the penal settlement in from 10 to 25 fathoms. Of the new species in this material only those belonging to the groups already reviewed in the papers by Baker, Hanna and Strong published by the Academy, are considered.

In addition, a new species from San Martin Island, off the west coast of Lower California, is included. It is the only new species

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<sup>1</sup> Strong, A. M., and G. D. Hanna, Proc. Calif. Acad. Sci., ser. 4, vol. 19, no. 1, 1930.

<sup>2</sup> Strong, A. M., and G. D. Hanna, Proc. Calif. Acad. Sci., ser. 4, vol. 19, no. 3, 1930.

found in drift material collected by G. D. Hanna and E. K. Jordan at that locality. Three other species, one from Socorro Island and two from the Gulf of California, are included.

### 1. *Turbonilla (Careliopsis) hannai* Strong, new species

Plate 15, figure 3

Shell very slender, elongate conic, translucent, yellowish-white; nuclear whorls about two, smooth, polished, forming an elevated helicoid spire, whose axis is at right angles to that of the succeeding whorls and from which it is separated by a sharp line; postnuclear whorls well rounded, very slightly shouldered at the summit, moderately contracted at the suture, marked with fine, incised, spiral lines of which 8 appear on the second whorl, 12 on the fourth, 14 on the sixth, and 16 on the penultimate whorl, between the sutures; axial ribs only faintly indicated by occasional swellings; periphery of last whorl well rounded; base moderately long, well rounded, marked with a few, incised, spiral lines similar in spacing to those on the spire but much fainter; aperture oval, outer lip thin, columella short, strongly curved, without visible fold at the insertion. The type has 8 postnuclear whorls and measures: length, 5.1 mm.; diameter, 0.9 mm.

*Holotype*: No. 5828, Calif. Acad. Sci. Paleo. Type Coll., dredged in from 10 to 25 fms. off **Maria Madre Island, Tres Marias group, Mexico**. Twelve additional specimens were secured at the same place.

The species differs from *Turbonilla (Careliopsis) stenogyra* Dall and Bartsch,<sup>3</sup> the only other West Coast species described in the subgenus, in its more slender, conical shape and more feeble indications of axial ribs, which can hardly be said to pit the incised spiral lines.

The species is named for Dr. G. D. Hanna, who, with E. K. Jordan, collected the material.

### 2. *Turbonilla (Pyrgiscus) madiella* Strong, new species

Plate 15, figure 4

Shell slender, elongate-conic, flesh color; nuclear whorls two, smooth, translucent, having their axis at right angles to the succeeding whorls, in the first of which they are slightly immersed; postnuclear whorls very slightly rounded, roundly shouldered at the summit, and slightly contracted at the suture; marked with strong, almost vertical, axial ribs, of which 12 appear on the second whorl, 14 on the fourth, 16 on the sixth, 20 on the eighth, 24 on the tenth, and 30 on the penultimate whorl; interspaces a little narrower than the ribs, marked with 6 incised, spiral lines, which are very faint on the upper whorls, but gradually increase in strength until, on the penultimate whorl, they appear as narrow pits; periphery well rounded, marked by a narrow, flat space; base short, well rounded, marked with 6 strong, incised, spiral

<sup>3</sup> Dall, W. H., and P. Bartsch, Bulletin 68, U. S. Nat. Mus., 1909, p. 130.

lines which grow gradually weaker and closer spaced from the periphery to the umbilical region, the first two below the peripheral band being pitted by the feeble continuation of the axial ribs; aperture oval, outer lip thin, showing the external sculpture within; columella slender, curved; parietal wall covered with a strong callus. The type has 12 postnuclear whorls and measures: length, 7.0 mm.; diameter, 1.7 mm.

*Holotype*: No. 5815, Calif. Acad. Sci. Paleo. Type Coll., dredged in from 10 to 25 fms. off **Maria Madre Island, Tres Marias group, Mexico**. Seventy additional specimens were secured at the same place.

This is one of the largest species in the subgenus, and is slightly larger than any previously reported from the Gulf of California region.

### 3. *Odostomia (Salassia) hertleini* Strong, new species

Plate 15, figure 9

Shell minute, pupiform, translucent, bluish-white; nuclear whorls two, smooth, slightly obliquely immersed in the first of the succeeding whorls; early postnuclear whorls rounded, the last flattened, scarcely contracted at the suture, closely appressed at the summit, the basal portion of the preceding whorl shining through the succeeding whorl, giving, in some lights, the appearance of a false suture or spiral groove; the whorls marked with 12 rounded, slightly protractive, axial ribs with shallow interspaces; on the early whorls these ribs are strong, reaching from suture to suture, but on the last whorl they are only feebly indicated at the summit; periphery rounded; base rather long, rounded, imperforate, marked with a few, faint, axial lines indicating the position for the extension of the axial ribs; aperture oval, posterior angle acute; outer lip thin, straight, basal lip slightly effuse, curving rather sharply into the outer lip and columella; columella slender, curved, with a weak fold at its insertion; parietal wall with a thin callus. The type has 6 postnuclear whorls and measures: length, 2.7 mm.; diameter, 0.8 mm.

*Holotype*: No. 5811 Calif. Acad. Sci. Paleo. Type Coll., dredged in from 10 to 25 fms. off **Maria Madre Island, Tres Marias group, Mexico**. Fifteen additional specimens were secured at the same locality.

While this species lacks both the tabulated summit to the whorls and the axial ribs extending to the umbilical region called for in Bartsch's description of the subgenus *Salassia* De Folin,<sup>4</sup> it clearly belongs to a natural group containing *Odostomia scalariformis* Carpenter<sup>5</sup> and *Odostomia gabrielensis* Baker, Hanna & Strong,<sup>6</sup> both of which have been placed in this subgenus. The present species differs from both in the number and character of the axial ribs.

<sup>4</sup> See Dall, W. H., and P. Bartsch, Bulletin 68, U. S. Nat. Mus., 1909, p. 13, 134.

<sup>5</sup> Carpenter, P. P., Cat. Maz. Shells, 1857, p. 413.

<sup>6</sup> Baker, F., Hanna, G. D., and A. M. Strong, Proc. Calif. Acad. Sci., ser. 4, vol. 17, 1928, p. 227, 228.

The species is named for Dr. Leo George Hertlein, Department of Paleontology, California Academy of Sciences.

#### 4. *Odostomia (Evalea) martinensis* Strong, new species

Plate 15, figure 10

Shell minute, broadly ovate, semi-translucent, bluish-white; nuclear whorls very deeply immersed in the first of the postnuclear whorls; postnuclear whorls inflated, very strongly rounded, marked with faint, retractive lines of growth, and fine, incised, spiral lines, of which 4 appear on the first whorl, 6 on the second, and 8 on the penultimate whorl between the sutures; periphery of the last whorl inflated, well rounded; base short, well rounded, marked like the spire with incised spiral lines, which become finer and closer spaced toward the narrow, open, umbilicus; aperture broadly ovate; columella short, curved, provided with a fold at its insertion. The type has 4 postnuclear whorls and measures: length, 1.5 mm.; diameter, 1.1 mm.

*Holotype*: No. 5813, Calif. Acad. Sci. Paleo. Type Coll., collected in beach drift at **San Martin Island, off Lower California, Mexico**. Eight additional specimens were collected at the same place by G. D. Hanna and E. K. Jordan.

This minute species is well characterized by the broad form, distinct spiral sculpture, and open umbilicus.

#### 5. *Cerithiopsis guadalupensis* Strong, new species

Plate 16, figure 6

Shell minute, broadly conic, chestnut brown; nuclear whorls two, smooth, well rounded, white, forming a minute, blunt apex; postnuclear whorls slightly rounded, high between the sutures, with both spiral and axial sculpture; spiral sculpture of three cords, of which one is at the summit, one a little above the periphery, and a median cord, which is much nearer the cord at the summit than the suprasutural cord; of these the cord at the summit is the weakest on all whorls, while the other two are about of equal strength; axial sculpture of almost vertical ribs, which are about as strong as the spiral cords, of which 12 appear on the first postnuclear whorl, 14 on the second, and 16 on the remainder of the whorls; intersection of the axial ribs and spiral cords forming strong tubercles, which are slightly truncated on the posterior margins; the spaces between the axial ribs and the median and suprasutural cords forming squarish pits, while those between the axial ribs and the median cord and the cord at the summit form spirally elongate pits; periphery of the last whorl marked by a strong, spiral cord, which is separated from the suprasutural cord by a sulcus as wide as that which separates the suprasutural cord from the median cord, and is rendered slightly waved by the feeble continuations of the axial ribs; base rather short, concave, without visible sculpture; aperture strongly channeled anteriorly; outer lip waved by the external sculpture (the edge broken in the type); columella short and stout; parietal wall covered with a thin callus. The type has 5 postnuclear whorls and measures: length, 2.3 mm.; diameter, 1.0 mm.

*Holotype*: No. 5810, Calif. Acad. Sci. Paleo. Type Coll., dredged in from 9 to 15 fms. off **Guadalupe Island, Mexico**. Fourteen addi-

tional specimens were secured at the same place by Messrs. Hanna; Jordan and Slevin.

While it is probable that none of the specimens may be fully mature, this would seem to be one of the smallest species described from the West Coast.

### 6. *Cerithiopsis anaitis* Bartsch

*Cerithiopsis anaitis* BARTSCH, *The Nautilus*, vol. 31, 1918, p. 72.

*Cerithiopsis helena* BARTSCH, *Proc. U. S. Nat. Mus.*, vol. 52, 1917, p. 670, pl. 46, fig. 2.—OLDROYD, *Stanford Univ. Publ. Geol. Sci.*, vol. 2, pt. 2, 1927, p. 216, pl. 67, fig. 2; [called "*Odostomia*" *helena* Bartsch].

Ten specimens, dredged in from 10 to 15 fathoms off Maria Madre Island, Tres Marias group, Mexico, seem to belong to this minute species. They agree very closely with the description and figure in all characters, except the color, which is uniformly brown. If correctly identified this is a widely distributed species as it has previously been reported from Panama Bay only.

### 7. *Diastoma slevini* Strong, new species

Plate 15, figure 2

Shell elongate conic, brownish; nuclear whorls a little over one, tilted at a slight angle, waxen, sculptured with a slender, spiral keel; early postnuclear whorls with a broad, sloping shoulder, later whorls moderately convex; spiral sculpture of fine, irregular, and irregularly spaced, raised threads, of which 2 appear on the first postnuclear whorl, 5 on the second, and gradually increasing in number until, on the penultimate whorl, about 20 appear between the sutures; axial sculpture on the early whorls of weak ribs or undulations, very irregular in strength and number, on the later whorls these become very faint, except for occasional indications of varix-like swellings; periphery and base well rounded, marked like the spire with about 10 spiral threads; aperture ovate, effuse, with a broad, shallow, anterior canal, interior yellowish, with a brown, spiral band anteriorly and a brown patch at the posterior angle; outer lip thin; columella short, twisted; parietal wall covered with a thick, brown callus. The type has 9 postnuclear whorls and measures: length, 7.6 mm.; diameter, 2.2 mm.

*Holotype*: No. 5809, Calif. Acad. Sci. Paleo. Type Coll., dredged in from 9 to 15 fms. off **Guadalupe Island, Mexico**. One hundred and eighty additional specimens were secured at the same place, including many young.

The species is named for Mr. Joseph R. Slevin, who, with G. D. Hanna and E. K. Jordan, made the collection at Guadalupe Island.

8. *Alabina jordani* Strong, new species

Plate 16, figure 9

Shell small, elongate conic, yellowish-white, variously blotched and lined with brown; nuclear whorls 2, smooth, rounded, white; postnuclear whorls sculptured with 4 spiral cords and numerous axial ribs; on the first two whorls the upper 2 and the 4th spiral cords are very feeble, while the 3rd forms a sharp keel, angulating the whorls; beginning with the third whorl the lower spiral cord begins to gradually increase in strength until, on the penultimate whorl, it equals the third, the first 2 cords, of which the upper is immediately below the suture, also gradually increase in strength on the later whorls, but are always weaker than the lower 2; the axial ribs begin to appear on the third whorl, and gradually increase in strength until on the penultimate whorl, where they number 16, they are nearly as strong as the 2 principal, spiral cords; the intersection of the spiral cords and axial ribs form spirally elongate nodules, which are sharply truncated on the posterior face; periphery marked by a sulcus about as wide as the spaces between the spiral cords; base short, slightly convex, marked with 5 spiral cords, of which the first and strongest, immediately below the sulcus, is slightly waved by the feeble continuations of the axial ribs, while the others become gradually weaker toward the umbilical region; aperture ovate, slightly channeled anteriorly; outer lip thin, showing the external sculpture within; columella short, oblique; parietal wall covered with a thin callus. The type has 7 postnuclear whorls and measures: length, 5.0 mm.; diameter, 1.4 mm.

*Holotype*: No. 5818, Calif. Acad. Sci. Paleo. Type Coll., dredged in from 9 to 15 fms. off **Guadalupe Island, Mexico**. Sixty-seven additional specimens were secured at the same place.

The species is named for the late Mr. E. K. Jordan, who, with G. D. Hanna and J. R. Slevin, made the collection at Guadalupe Island.

9. *Rissoina guadalupensis* Strong, new species

Plate 15, figure 7

Shell small, elongate conic, subdiaphanous, white; nuclear whorls a little over two, comparatively large, smooth, well rounded, the first forming a minute, blunt apex; postnuclear whorls moderately rounded, very slightly shouldered at the summit; axial sculpture of 20 slender, straight, protractive ribs, which are not quite as wide as the spaces which separate them, and extend over the base to the umbilical region; spiral sculpture of very numerous, sharp striations, which are most prominent in the interspaces between the axial ribs; periphery and base well rounded, sculptured like the spire; aperture effuse, thickened at the edge; inner lip slender, curved; parietal wall with a moderately thick callus. The type has 7 postnuclear whorls and measures: length, 4.0 mm.; diameter, 1.5 mm.

*Holotype*: No. 5812, Calif. Acad. Sci. Paleo. Type Coll., dredged in from 9 to 15 fms. off **Guadalupe Island, Mexico**. Twenty-five additional specimens were secured at the same place.

This belongs to the group of minute, thin, white species ranging from the Santa Barbara Islands, California, to San Martin Island,

Mexico, in which Bartsch has described five species: *R. cleo*, *R. dalli*, *R. californica*, *R. bakeri*, and *R. coronadoensis*.<sup>7</sup> The present species differs from all of them in the presence of the distinct spiral sculpture.

#### 10. *Rissoina lowei* Strong, new species

Plate 16, figure 7

Shell cylindro-conic, varying from pale yellowish to dark brown, unicolor, or in broad, spiral bands; nuclear whorls two, smooth, well rounded, the first forming a comparatively large, blunt apex; postnuclear whorls moderately rounded, slightly shouldered at the summit; spiral sculpture of fine, close-spaced threads, of which 5 show on the first whorl, 8 on the second, 12 on the third, and 16 on the penultimate whorl between the sutures; in addition to this spiral sculpture the first two whorls are marked with 16, low, rounded, axial undulations which are faintly indicated on the third whorl, but entirely absent from the rest of the shell; periphery well rounded; base moderately long, well rounded, marked with 8 spiral threads similar to those on the spire; aperture ovate; outer lip very little thickened, the edge finely serrated by the spiral threads; columella short, thin, strongly curved; parietal wall covered with a thin callus. The type has 5 postnuclear whorls and measures: length, 4.5 mm.; diameter, 1.8 mm.

*Holotype*: No. 5814, Calif. Acad. Sci. Paleo. Type Coll., dredged in from 9 to 15 fms. off **Guadalupe Island, Mexico**. Two hundred and twenty additional specimens, including many young, were secured at the same place.

This belongs to the well marked group of west coast species with colored shells and faint axial sculpture, containing *R. kelseyi* Dall and Bartsch,<sup>8</sup> from Southern California and *R. lapazana* Bartsch,<sup>9</sup> *R. berryi* Baker, Hanna and Strong,<sup>10</sup> and *R. stephensæ*<sup>11</sup> Baker, Hanna and Strong from the Gulf of California. From the first three it differs in the much smaller size, as well as in the details of the sculpture, and from the last in the rounded periphery and more numerous spiral threads.

The species is named for the late Mr. H. N. Lowe, well known collector of mollusks.

#### 11. *Rissoina willetti* Strong, new species

Plate 15, figure 6

Shell small, elongate conic, subdiaphanous, white; nuclear whorls nearly two, small, well rounded; postnuclear whorls well rounded, very slightly shouldered at the summit; axial sculpture of 12 strong, nearly straight, protractive ribs, separated

<sup>7</sup> Bartsch, P., Proc. U. S. Nat. Mus., vol. 49, 1915, pp. 55-60.

<sup>8</sup> Dall, W. H., and P. Bartsch, The Nautilus, vol. 16, 1902, p. 94.

<sup>9</sup> Bartsch, P., Proc. U. S. Nat. Mus., vol. 49, 1915, p. 50.

<sup>10</sup> Baker, F., Hanna, G. D., and A. M. Strong, Proc. Calif. Acad. Sci., ser. 4, vol. 19, no. 4, 1930, p. 35.

<sup>11</sup> Baker, F., Hanna, G. D., and A. M. Strong, Proc. Calif. Acad. Sci., ser. 4, vol. 19, no. 4, 1930, p. 33.



by spaces about twice as wide as the ribs which terminate at the periphery; spiral sculpture absent; periphery marked by a slender spiral thread; base short, concave anteriorly, marked with very feeble continuations of the axial ribs; aperture effuse, outer lip much thickened; columella short, curved; parietal wall covered with a thin callus. The type has 6 postnuclear whorls and measures: length, 2.9 mm.; diameter, 1.1 mm.

*Holotype*: No. 5829, Calif. Acad. Sci. Paleo. Type Coll., dredged in from 9 to 15 fms. off **Guadalupe Island, Mexico**. Seventy additional specimens were secured at the same place.

This differs from all species described from the West Coast in having an almost smooth base with the ribs terminating at the periphery.

The species is named for Mr. George Willett, Curator of Ornithology, Los Angeles County Museum of Science, History and Art.

## 12. *Alvania granti* Strong, new species

Plate 15, figure 8

Shell small, elongate conic, yellowish-white; nuclear whorls 2, smooth, well rounded; postnuclear whorls rounded, shouldered at the summit, separated by a deep suture; axial sculpture of sharp, almost vertical ribs, of which 12 appear on the first and second whorls and 14 on the remaining whorls; spiral sculpture of equally strong cords, of which 2 appear on the first and second whorls, one at the summit and the other a little above the suture, on the third whorl a slightly smaller cord appears between the first two, followed by other, intercalary cords until, on the penultimate whorl, there are 6 cords between the sutures, all of about equal strength; the junction of the axial ribs and spiral cords form strong tubercules, while the interspaces vary from deep, squarish pits on the upper whorls to narrow, spirally elongate pits in the last whorl; periphery of the last whorl marked by a narrow sulcus; base moderately rounded, produced anteriorly, marked by 6 strong, spiral cords, the one immediately below the peripheral sulcus being rendered tuberculate by feeble extensions of the axial ribs; aperture oblique, oval, posterior angle obtuse; outer lip thickened by a varix just back of the edge; inner lip short, curved; parietal wall covered by a thick callus. The type has 5 postnuclear whorls and measures: length, 2.8 mm.; diameter, 1.1 mm.

*Holotype*: No. 5825, Calif. Acad. Sci. Paleo. Type Coll., dredged in from 10 to 25 fms. off **Maria Madre Island, Tres Marias group, Mexico**. Seventy-five additional specimens were secured at the same place.

The sculpture of this species seems to be quite similar to that of *Alvania effusa* Carpenter,<sup>12</sup> from Mazatlan, if the figure given by Bartsch:<sup>13</sup> "after a camera lucida sketch by Dr. Carpenter," can be depended upon. However, that figure shows more numerous axial ribs and spiral cords than are found on the present species.

<sup>12</sup> Carpenter, P. P., Cat. Maz. Shells. 1857, p. 359.

<sup>13</sup> Bartsch, P., Proc. U. S. Nat. Mus., vol. 41, 1912, p. 358, pl. 32, fig. 5.



The species is named for U. S. Grant IV, Associate Professor of Paleontology, University of California at Los Angeles.

### 13. *Alvania herrerae* Baker, Hanna & Strong

*Alvania herrerae* BAKER, HANNA & STRONG, Proc. Calif. Acad. Sci., ser. 4, vol. 19, 1930, pp. 25, 26.

Twenty-five specimens of this species were dredged in from 10 to 25 fms. off Maria Madre Island of the Tres Marias group, Mexico. This adds considerably to the range; the species was described from Cape San Lucas.

### 14. *Rissoella* (?) *bakeri* Strong, new species

Plate 15, figure 5

Shell small, thin, broadly ovate, semitranslucent, bluish-white; nuclear whorls hardly differentiated from the postnuclear whorls; whorls inflated, well rounded; sculpture consisting of fine, close-spaced, incised, spiral lines of which 6 appear on the second whorl and 12 on the third whorl, the spacing continuing about the same over the body whorl and base; the spaces between the first 3 incised, spiral lines below the suture and the last 5 on the base are slightly raised, giving the appearance of spiral threads; periphery and base well rounded; aperture broadly oval, posterior angle acute, angle at the junction of the basal and inner lip very obtuse; outer lip thin, inner lip strongly curved, expanded over the parietal wall, rendering the peritreme complete, the lower portion separated from the body whorl by a shallow groove leading to the small, open umbilicus. The type has  $4\frac{1}{2}$  whorls and measures: length, 2.2 mm.; diameter, 1.6 mm.

*Holotype*: No. 5821, Mus. Calif. Acad. Sci. Paleo. Type Coll., dredged in from 9 to 15 fms. off **Guadalupe Island, Mexico**. Six additional specimens were secured at the same place.

This species appears to belong to the same genus as *Rissoella* (?) *californica* Bartsch,<sup>14</sup> of which he says: "I am placing this species in the genus *Rissoella* with some doubt, but until I have seen anatomic material I hesitate to give it a distinct generic designation." The Academy specimens are also "dead" so the anatomic material is yet to be secured. The present species differs from *R. californica* in the stronger, spiral sculpture, smaller umbilicus and proportionally broader form. The general character of the shell agrees very well with those of the species listed and described in a preceding paper on "Some Rissoid Mollusca from the Gulf of California"<sup>15</sup> under the genus *Rissoella*.

<sup>14</sup> Bartsch, P., Proc. U. S. Nat. Mus., vol. 70, art. 11, 1927, p. 31.

<sup>15</sup> Baker, F., Hanna, G. D., and A. M. Strong, Proc. Cal. Acad. Sci., ser. 4, vol. 19, no. 4, 1930, p. 36.

The species is named for Dr. Fred Baker, Point Loma, California.

### 15. *Colubraria jordani* Strong, new species

Plate 16, figure 8

*Epidromus nitidulus* SOWERBY, STRONG and HANNA, Proc. Calif. Acad. Sci., ser. 4, vol. 19, no. 2, 1930, p. 11. Socorro Island, Revillagigedo Islands. Not *Triton nitidulus* SOWERBY.

*Colubraria jordani* STRONG, (MS.), in Hertlein, Proc. Amer. Philos. Soc., vol. 78, no. 2, 1937, p. 306. Socorro Island, Revillagigedo Group; Galapagos Islands.

Shell slender, with two and a half nuclear whorls and eleven subsequent, sculptured whorls, light brown with two spiral rows of darker spots; each whorl with one or two varices; upper whorls with three fine, spiral threads, slightly nodulous where they cross equally fine, axial riblets, the sculpture becoming fainter on the later whorls; entire surface with microscopic, spiral striations; periphery of last whorl rounded, base short, rounded; outer lip thickened by a varix, inside with eight indistinct, spirally elongate denticles; body with a broad wash of callus, and a spiral rib just below the posterior end of the aperture; columella expanded; canal short, recurved. The type measures: length, 35 mm.; maximum diameter, 10 mm.

*Holotype*: No. 7017, Calif. Acad. Sci. Paleo. Type Coll., from Loc. 23776 (C. A. S.), Socorro Island, Revillagigedo group, Mexico,<sup>16</sup> G. D. Hanna and E. K. Jordan, collectors, July 1925. Seven additional specimens were secured at the same locality.

This west American species differs from *Colubraria nitidulus* Sowerby,<sup>17</sup> well known in the Indo-Pacific fauna, in being decidedly more slender, having more rounded whorls, and in the more emphatic sculpture. These differences appeared constant in a comparison with three lots of specimens of *C. nitidulus* from the Philippine Islands in the collection of the Leland Stanford Jr. University.

This species is named for Mr. Eric Knight Jordan, formerly Assistant Curator of Paleontology of the California Academy of Sciences.

### *Alleorus* Strong, new genus

Shell minute, depressed, spiral, with close-set spiral lines; umbilicus deeply rimate; aperture very oblique with a deep sinus-notch at the suture; shell growth about this sinus produces a series of sutural nodes, set oblique to the suture; apical whorl smooth and polished. Type, *Alleorus deprillus* Strong, new species.

<sup>16</sup> Strong, A. M., and G. D. Hanna, Proc. Calif. Acad. Sci., ser. 4, vol. 19, no. 2, 1930, p. 7.

<sup>17</sup> *Triton nitidulus* Sowerby, Proc. Zool. Soc., 1833, p. 71, "Hab. ad Insulam Annaa." "Found on the reefs."—Reeve, Conch. Icon., vol. 2, 1844, *Triton*, species 70.

The combination of characters displayed by this mollusk has not been found in any described genus. It probably belongs to the Adeorbidae but even this determination is not at all certain. The row of sutural beads is very striking and this position of a highly developed sinus is unusual, at least, in members of that family.

### 16. *Alleorus deprellus* Strong, new species

Plate 16, figures 3, 4, 5

Shell minute, depressed, composed of three slightly rounded whorls, the apical one, smooth and polished, the remaining two, finely spirally striate, crossed by low ridges parallel to growth lines; last whorl sharply carinate; base flattened, marked with fine, spiral lines as above; umbilicus deeply rimate, half covered within by a callus plate; aperture very oblique; peristome not thickened; parietal wall rounded and thickened; a deep sinus located at the suture line; at regular intervals during growth the callus deposit found about the sinus forms a retractive node; these are closely spaced forming a sutural row of beads, 24 being present on the last whorl; interiorly a deep, rounded groove follows the sutural line. Greatest diameter 2.06 mm.; least diameter 1.66 mm.; altitude .73 mm.

*Holotype*: No. 7075, Calif. Acad. Sci. Paleo. Type Coll., dredged by Fred Baker at **San Jose Island, Gulf of California**, in shallow water in 1921. *Paratype*: No. 7076, from the same locality.

The holotype appears to be adult. The paratype is somewhat smaller, but the characters shown do not differ otherwise than as described above. The row of beads following the suture makes this a very striking little shell, not even near to anything else we have been able to locate in the literature. Tentatively, it seems best to include it in the family Adeorbidae.

### 17. *Glycymeris guadalupensis* Strong, new species

Plate 16, figures 1 and 2

Shell small, orbicular, thick and solid, moderately compressed, surface evenly reticulated with fine, close-spaced, radiating and concentric ridges; epidermis wanting; umbones small, close, projecting slightly above the hinge line, posterior and basal margins evenly rounded, anterior slightly angulated, hinge line straight; inner margin crenulated, cardinal area very narrow, with a small, chevron-shaped groove and two diagonal striations; hinge plate broad, strongly curved, the anterior side longer, with, in the type, eight strong teeth on each side; umbones and a varying sized area below them white; remainder of exterior brown, the line between the white and brown areas usually sharply defined in a zig-zag pattern; interior white, stained with brown. The type and paratype, consisting of a right and a left valve of equal size, measure: length, 7.5 mm.; height, 7.0 mm.; diameter, 4.5 mm.

*Holotype*: No. 5822, and *paratype*: No. 5822A, Calif. Acad. Sci. Paleo. Type Coll., dredged in from 9 to 15 fms. off **Guadalupe Island**,

**Mexico.** Thirty attached pairs, all young, and one hundred and forty single valves were secured at the same place.

The largest valve secured (paratype No. 5823) measures: length, 10 mm.; height, 10 mm. In general appearance the present species resembles *Glycymeris corteziana* Dall,<sup>18</sup> the type of which was dredged off Cortez Bank but it seems to be a much smaller shell differing somewhat in shape and sculpture.

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<sup>18</sup> Dall, W. H., Proc. U. S. Nat. Mus., vol. 52, 1916, p. 402.

## PLATE 15

Fig. 1. *Amphissa lyrta* Baker, Hanna and Strong, n. sp. Holotype, No. 5816, C. A. S. Paleo. Type Coll., Isla Partida, Gulf of California. Length, 9.0 mm.; diameter, 4 mm.; p. 252. (The description of this species will be found in Vol. XXIII, No. 16, p. 252; Baker, Hanna and Strong, Columbellidæ from Western Mexico).

Fig. 2. *Diastoma slevini* Strong, n. sp. Holotype, No. 5809, C. A. S. Paleo. Type Coll., Guadalupe Island, Mexico. Length, 7.6 mm.; diameter, 2.2 mm.; p. 207.

Fig. 3. *Turbonilla hannai* Strong, n. sp. Holotype, No. 5828, C. A. S. Paleo. Type Coll., Maria Madre Island, Mexico. Length, 5.1 mm.; diameter, 0.9 mm.; p. 204.

Fig. 4. *Turbonilla madriella* Strong, n. sp. Holotype, No. 5815, C. A. S. Paleo. Type Coll., Maria Madre Island, Mexico. Length, 7.0 mm.; diameter, 1.7 mm.; p. 204.

Fig. 5. *Rissoella* (?) *bakeri* Strong, n. sp. Holotype, No. 5821, C. A. S. Paleo. Type Coll., Guadalupe Island, Mexico. Length, 2.2 mm.; diameter, 1.6 mm.; p. 211.

Fig. 6. *Rissoina willetti* Strong, n. sp. Holotype, No. 5829, C. A. S. Paleo. Type Coll., Guadalupe Island, Mexico. Length, 2.9 mm.; diameter 1.1 mm.; p. 209.

Fig. 7. *Rissoina guadalupensis* Strong, n. sp. Holotype, No. 5812, C. A. S. Paleo. Type Coll., Guadalupe Island, Mexico. Length, 4.0 mm.; diameter, 1.5 mm.; p. 208.

Fig. 8. *Alvania granti* Strong, n. sp. Holotype, No. 5825, C. A. S. Paleo. Type Coll., Maria Madre Island, Mexico. Length, 2.8 mm.; diameter, 1.1 mm.; p. 210.

Fig. 9. *Odotomia hertleini* Strong, n. sp. Holotype, No. 5811, C. A. S. Paleo. Type Coll., Maria Madre Island, Mexico. Length, 2.7 mm.; diameter, 0.8 mm.; p. 205.

Fig. 10. *Odotomia martinensis* Strong, n. sp. Holotype, No. 5813, C. A. S. Paleo. Type Coll., San Martin Island, Lower California, Mexico. Length, 1.5 mm.; diameter 1.1 mm.; p. 206.

## PLATE 16

Fig. 1. *Glycymeris guadalupensis* Strong, n. sp. Holotype, a right valve, No. 5822, C. A. S. Paleo. Type Coll., Guadalupe Island, Mexico. Length, 7.5 mm.; height, 7.0 mm.; p. 213.

Fig. 2. *Glycymeris guadalupensis* Strong, n. sp. Paratype, No. 5822A, C. A. S. Paleo. Type Coll. Inside of left valve; p. 213.

Figs. 3, 4, 5. *Alleorus deprellus* Strong, n. sp. Holotype, No. 7075, C. A. S. Paleo. Type Coll., San Jose Island, Gulf of California. Diameter, 2.06 mm.; altitude .73 mm.; p. 213.

Fig. 6. *Cerithiopsis guadalupensis* Strong, n. sp. Holotype, No. 5810, C. A. S. Paleo. Type Coll., Guadalupe Island, Mexico. Length, 2.3 mm.; diameter, 1.0 mm.; p. 206.

Fig. 7. *Rissoina lowei* Strong, n. sp. Holotype, No. 5814, C. A. S. Paleo. Type Coll., Guadalupe Island, Mexico. Length, 4.5 mm.; diameter, 1.8 mm.; p. 209.

Fig. 8. *Colubraria jordani* Strong, n. sp. Holotype, No. 7017, C. A. S. Paleo. Type Coll., Socorro Island, Revillagigedo Islands, Mexico. Length, 35 mm., maximum diameter 10 mm.; p. 212.

Fig. 9. *Alabina jordani* Strong, n. sp. Holotype, No. 5818, C. A. S. Paleo. Type Coll., Guadalupe Island, Mexico. Length, 5.0 mm.; diameter, 1.4 mm.; p. 208.